

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): An optical network having nodes and optical links between nodes, comprising:

a plurality of data channels;

a control channel;

tokens which pass between nodes on the control channel;

wherein tokens advertise availability of receivers at a destination node and notify a source when a transmission did not succeed; ~~and succeed~~;

wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels.

Claim 2 (cancelled): ~~The network of Claim 1, wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels~~

Claim 3. (original): The network of Claim 1, wherein the tokens notify a source when a transmission did not succeed due to receiver preemption.

Claim 4. (original): The network of Claim 1, wherein each node of the network has fewer transmitters and receivers than data channels.

- Claim 5. (original): The network of Claim 1, wherein each token carries a first field for advertising availability of receivers and a second field for notifying a source when a transmission does not succeed due to receiver preemption.
- Claim 6. (original): The network of Claim 5, wherein the first field of a first token includes a count of the available receivers at a destination node, and wherein the count is decremented by a transmitting node when the transmitting node claims a receiver at the destination node.
- Claim 7. (original): The network of Claim 6, wherein if the count is negative, an intervening node between the transmitting node and the destination node will stop a data payload associated with the first token.
- Claim 8. (original): The network of Claim 1, wherein tokens comprise subsets each associated to a RX/TX waveband range and are treated collectively during configuration.
- Claim 9. (original): The network of Claim 1, wherein contiguous paths between nodes are separately represented in the token
- Claim 10. (original): The network of Claim 1, wherein transmitting nodes reserve apparently available receivers at downstream nodes without external confirmation.
- Claim 11. (currently amended): The network of Claim 1, wherein tokens include a two-bit field of at least two bits indicating communication link status, wherein a first value indicates that (00) ~~means~~ the corresponding link is currently available, a second value indicates that ~~of~~ (01) ~~means~~ the corresponding link is either a source link or an intermediate link between a source and destination, a third value indicates that ~~of~~ (10) ~~means~~ the corresponding link is a destination link, and a fourth value indicates that ~~of~~ (11) ~~means~~ the link is the only link between the source node and the destination node.

Claim 12. (previously presented): An optical network comprising nodes and optical links between nodes, comprising:

a plurality of data channels;

a control channel;

tokens which pass between nodes on the control channel;

wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels; and

wherein each token includes an indication of a path reservation and an indication of a priority for the path reservation.

Claim 13. (original): The network of Claim 12, wherein tokens advertise availability of receivers at a destination node and notify a source when a transmission did not succeed.

Claim 14. (original): The network of Claim 12, wherein each node of the network has fewer transmitters and receivers than data channels.

Claim 15. (original): The network of Claim 12, wherein path reservations can be overridden by higher urgency path reservations.

Claim 16. (original): The network of Claim 12, wherein transmitting nodes reserve apparently available receivers at downstream nodes without external confirmation.

Claim 17. (original): The network of Claim 12, wherein the network comprises a ring topology.

Claim 18. (original): An optical network having nodes and optical links between nodes, comprising:

a plurality of data channels;

a control channel;

chords between selected nodes of the network;

tokens which pass between nodes on the control channel;

wherein nodes evaluate the tokens to determine if a data payload is destined for and simultaneously arriving at that node on one of the data channels;

wherein nodes and links comprise a ring topology, the default ring being a primary ring; and

wherein chords connect non-contiguous nodes of the ring topology.

Claim 19. (original): The network of Claim 18, wherein data may be diverted from the primary ring to bypass a node by sending the data across a chord.

Claim 20. (original): The network of Claim 18, further comprising switches at the nodes to divert data from the primary ring to a chord.

Claim 21. (original): The network of Claim 20, wherein a token associated with the diverted data remains on the primary ring and arrives substantially simultaneously with the associated token at a destination node.